

Challenges and Directions in Establishing Contemporary Behavior Assessments: Development and Evaluation of Direct Behavior Rating

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Presentation for 2012 CT ABA Conference



Purpose:

- To set the rationale for DBR through description of historical through contemporary needs in behavior assessment
- To review work to date in the development and evaluation of DBR scales, with emphasis on DBR-Single Item Scales
- To provide demonstrations of DBR-SIS application across assessment purposes, tiers of problem-solving, and in combination with other methods to result in comprehensive assessment

My Background

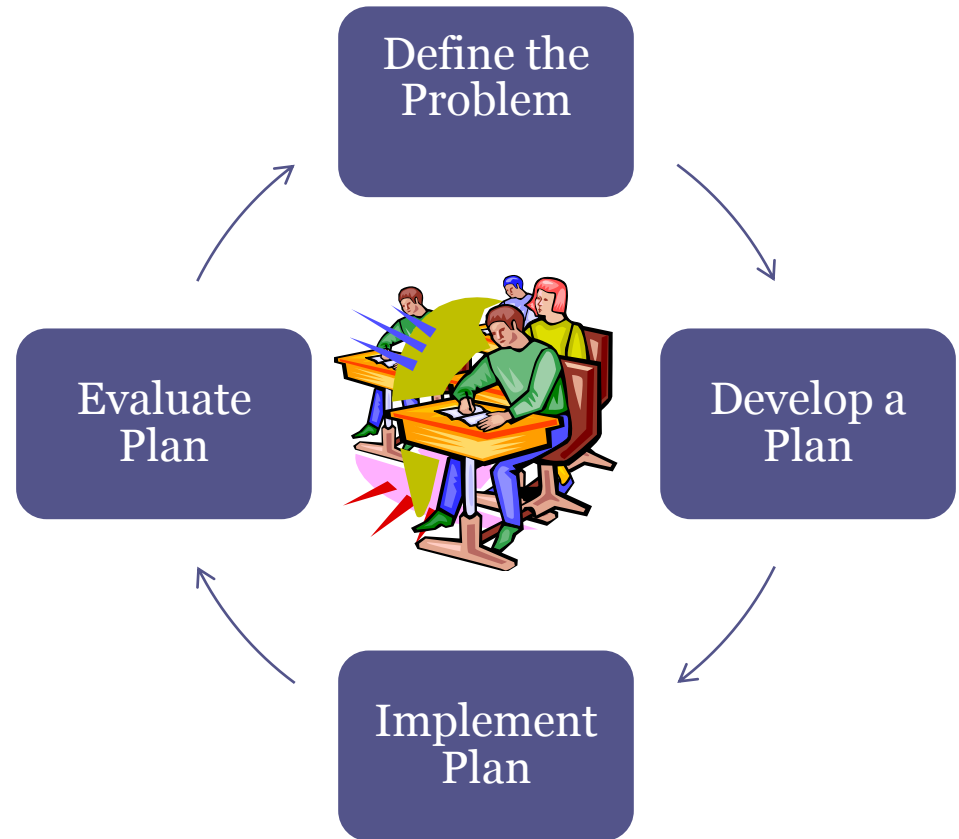
- Current Position at UCONN
 - Professor of School Psychology
 - Research Scientist with the Center for Behavioral Education and Research
- Training
 - School psychology and administration
- Urban and rural school-based practitioner
 - Pre-referral intervention teams, augmentative communication, district crisis team, parent educator, alternative settings for behavior
- Research to get my degree
 - Early literacy assessment
- Current research
 - Behavior assessment research

What is “response to intervention”?

BASIC QUESTION: How do we know if X is working?

- Foundations within *data-based decision making*
- Roots of data-based decision making come from *the problem-solving model*
- Model became clearly articulated within psychology and then education through applied behavior analysis --- behavioral consultation or pre-referral teams
- Initial focus on the individual “case” but now applied to multi-tiered frameworks (“all cases”)

(Bergan, 1977, Bergan&Kratowill, 1990; Tilly, 2009; Reschly& Bergstrom, 2009)



How to purposes of assessment fit into “response to intervention”?

- Screening

- Who needs help?

- Diagnosis

- Why is the problem occurring?

- Progress Monitoring

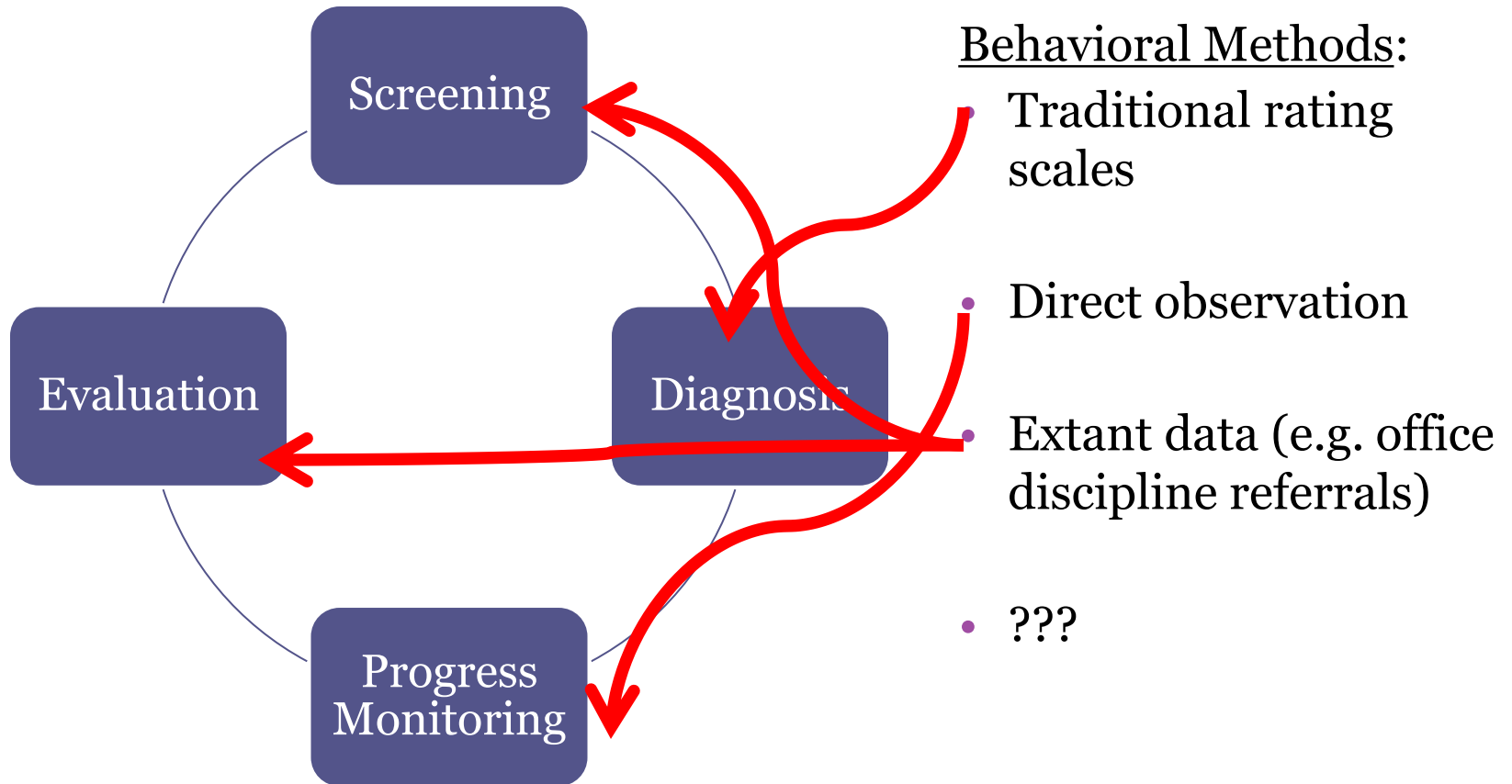
- Is intervention working?

- Evaluation

- How well are we doing overall?

Emphasized by the National Center on Response to Intervention

How does this work for behavioral domains of student functioning?



For behavior... it's not that simple

- Absence of a gold standard criterion
- One measure can't do it all
 - Multiple measures are needed to evaluate different facets
- Co-morbidity of “problems”
 - What are the most relevant problem features?
- Multiple perspectives are valuable yet agreement may (will) be low!
- Moderators matter...

(Adapted from Kazdin, 2005)

Universally-accepted
GOM for social
behavior does not exist

Direct observations
are resource
intensive

Decision rules
for judging
“responsiveness”
not established

School-based behavior assessments?

Permanent
products lack
defensibility/
sensitivity

Traditional
behavior
rating scales
not sensitive
to change, not
contextually
relevant

There are no
social behavior
“benchmarks”

School-based behavior assessment: THE PROBLEM FOR RESEARCH

Desirable Characteristics

- Current methods of behavior assessment were not built for utility in problem-solving assessments
- There is need to develop and evaluate new options that possess desirable characteristics for screening and progress monitoring...

- **Defensible**
 - established through psychometric research to provide evidence of reliability and validity for interpretation and use
- **Flexible**
 - established by methods useful in guiding a variety of assessment questions and situations
- **Efficient**
 - established by methods that require relatively few resources (feasible and reasonable)
- **Repeatable**
 - established by methods that yield necessary time series to evaluate intervention effectiveness

(Chafouleas, Volpe, Gresham, & Cook, 2010)

Source: Chafouleas, Riley-Tillman, & Christ, 2009; Chafouleas, Riley-Tillman, & Sugai, 2007; Christ, Riley-Tillman, & Chafouleas, 2009)

School-based behavior assessment and RTI: THE PROBLEM FOR YOU

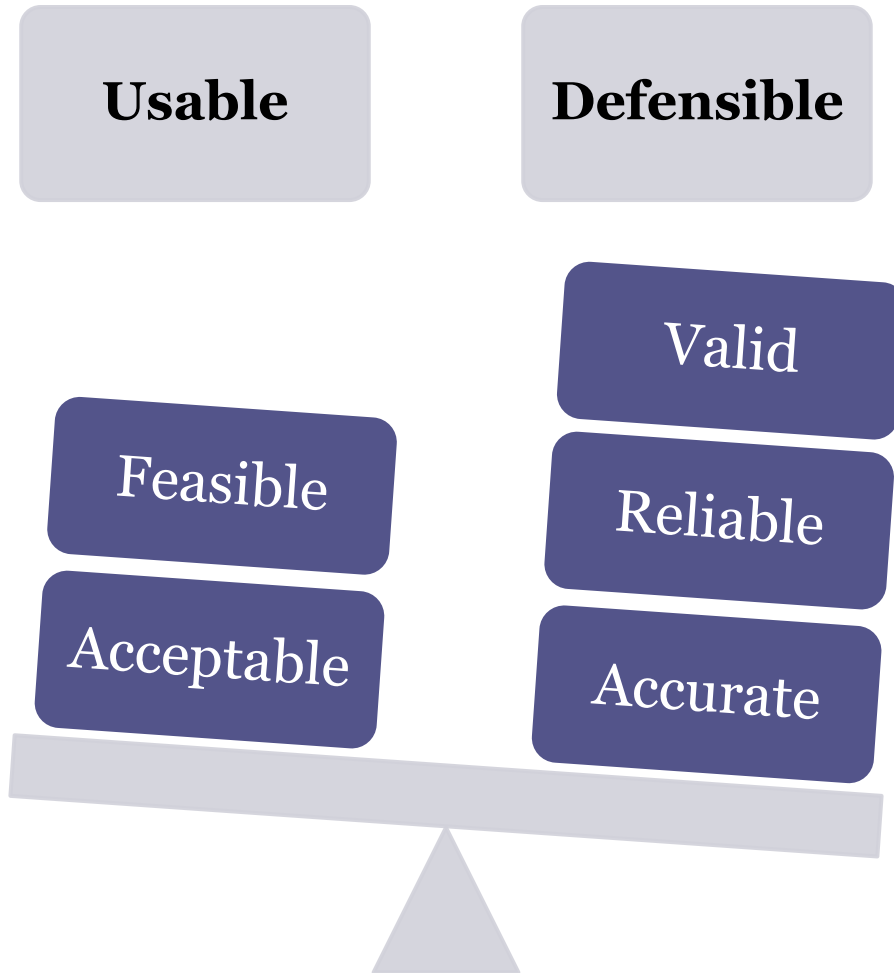
Solution?

RTI means service accountability for all = MORE cases with same resources

The traditional assessment and intervention orientation is *not feasible or flexible* for a multi-tiered framework

- Quickly design interventions at all tiers
- Collect relevant formative data in a highly feasible manner
- Include a consistent way to analyze data that is quick and easy for anyone to do

Finding a Balance...



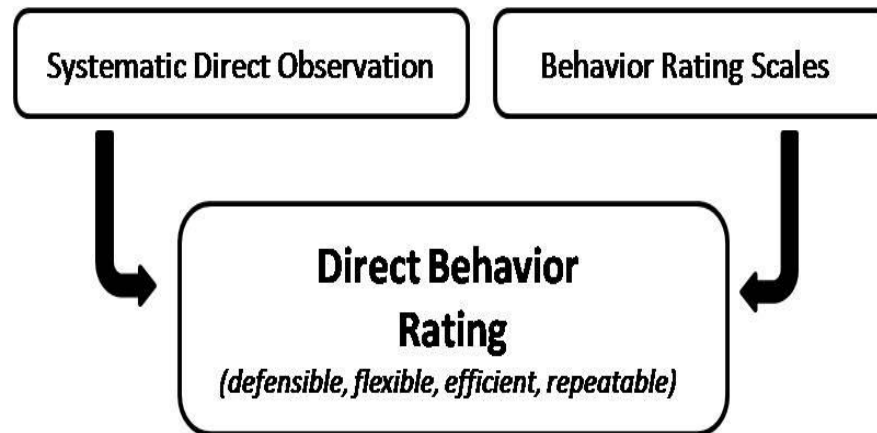


What is
Direct
Behavior
Rating?

DIRECT BEHAVIOR RATING :

What is DBR?

An emerging alternative to systematic direct observation and behavior rating scales which involves *brief rating* of target behavior following a specified observation period

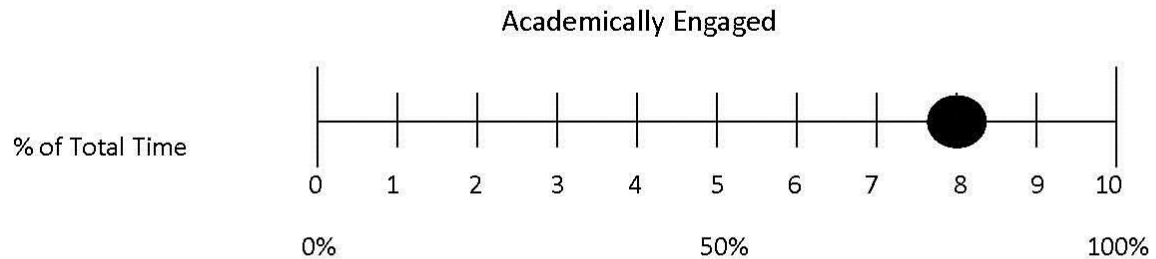


Chafouleas, Riley-Tillman, & Christ (2009); Chafouleas, Riley-Tillman, & Sugai (2007); Chafouleas, Riley-Tillman, & McDougal (2002); Christ, Riley-Tillman, & Chafouleas (2009)

Example Scale Formats for DBR

Source: Chafouleas, Riley-Tillman, & Christ (2009)

Single Item Scale



Interpretation: The student displayed academically engaged behavior during 80% of the observation period.

Multi-Item Scale

	<u>Never</u>		<u>Always</u>
Did the student follow class rules?	0	1	2
Did the student follow teacher directions?	0	1	2
Did the student do his/her best work?	0	1	2
Total number of points earned:	_____ 5 _____		

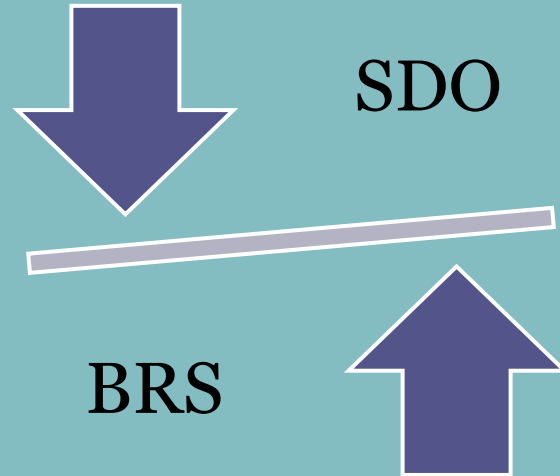
Interpretation: The student earned 84% (5/6) of possible points during the observation period.

A little background...

Other Names for DBR-like Tools:

- Home-School Note
- Behavior Report Card
- Daily Progress Report
- Good Behavior Note
- Check-In Check-Out Card
- Performance-based behavioral recording

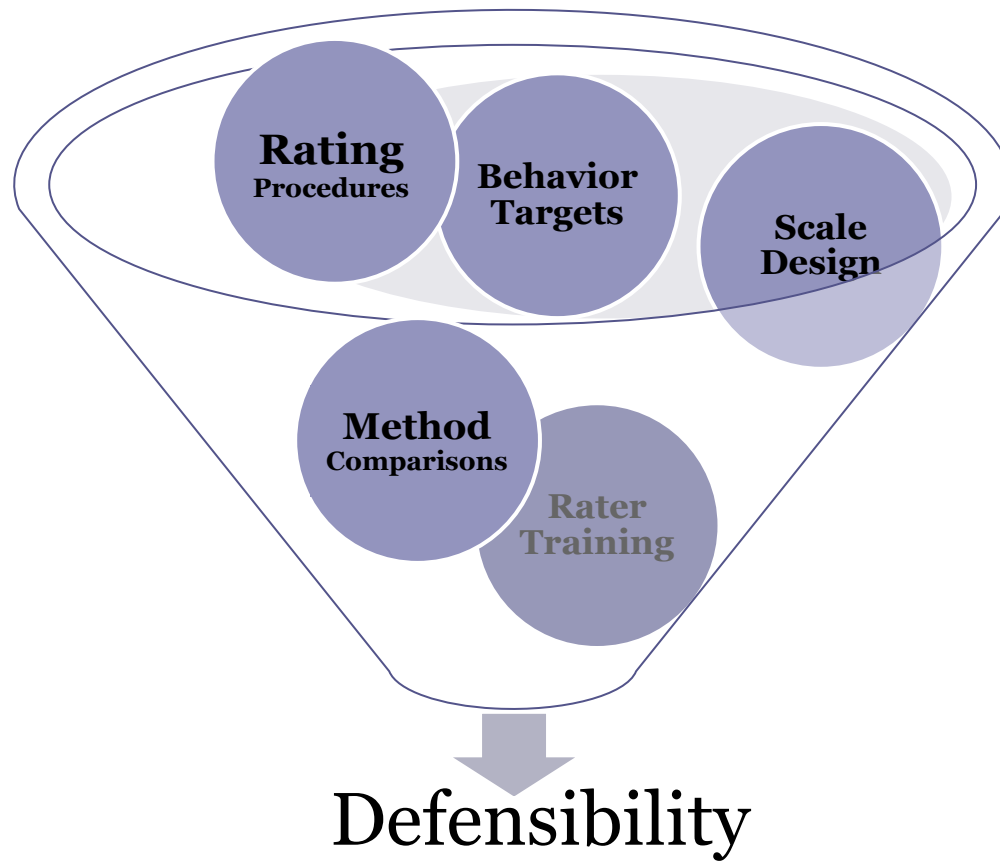
Contemporary Defining Features:



Used repeatedly to represent behavior that occurs over a specified period of time (e.g., 4 weeks) and under specific and similar conditions (e.g., 45 min. morning seat work)

Project VIABLE (2006-2011)

Develop instrumentation and procedures, then evaluate defensibility of DBR in decision-making

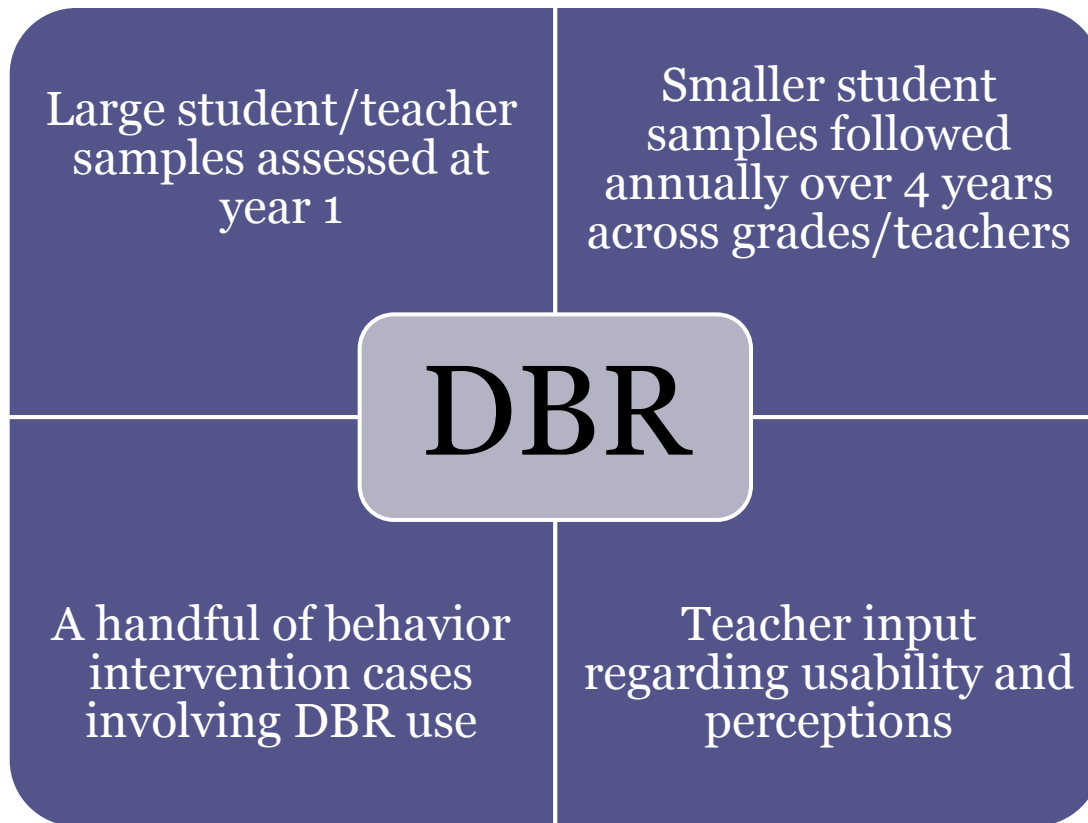


Funding provided by the
**Institute for Education
Sciences**, U.S. Department of
Education



Project VIABLE-II (2011-2015)

Evaluate defensibility and usability of DBR in decision-making at larger scale



Funding provided by the **Institute for Education Sciences**, U.S. Department of Education



DBR-SIS Targets:

“The Big 3” General Outcomes

Academic Engagement:

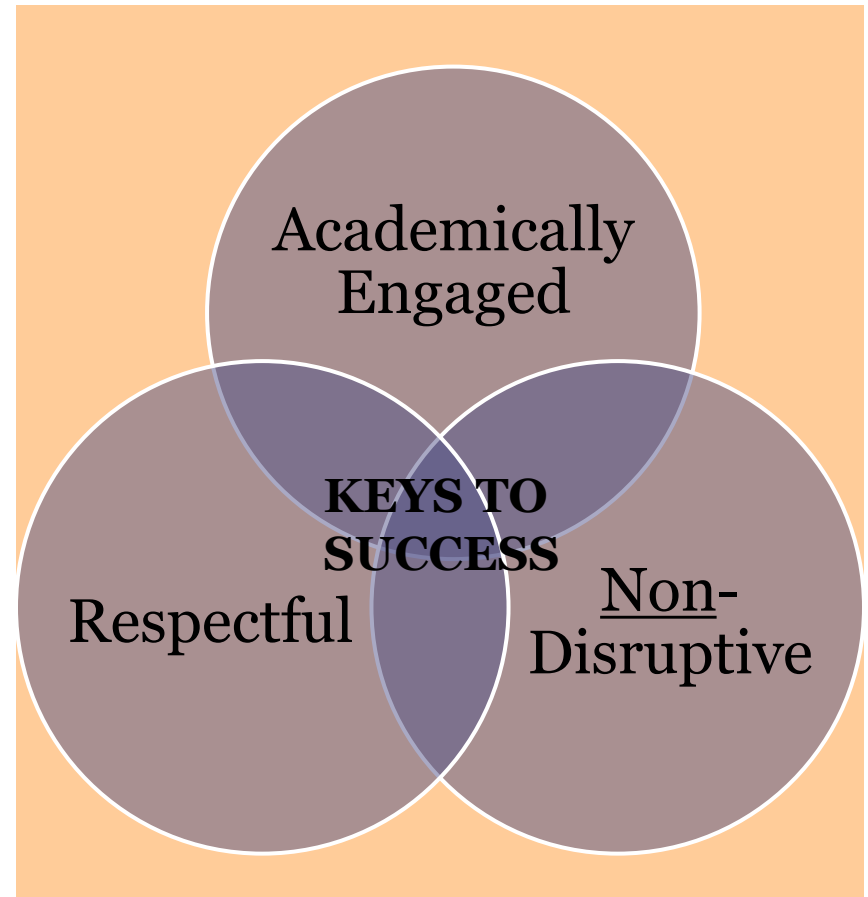
Actively or passively participating in the classroom activity.

Respectful:

Compliant and polite behavior in response to adult direction and/or interactions with peers and adults.

Disruptive Behavior:

A student action that interrupts regular school or classroom activity.



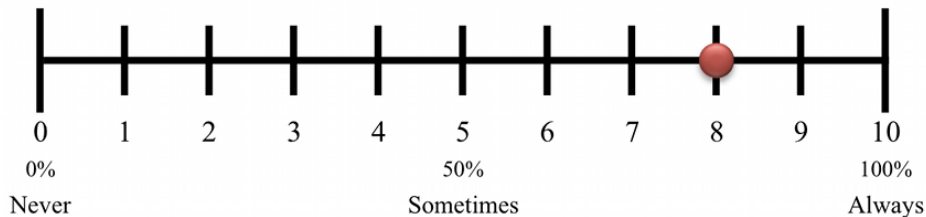


Example DBR-SIS scales

Academically Engaged

Place a mark along the line that best reflects the percentage of total time the student was Academically Engaged during math today.

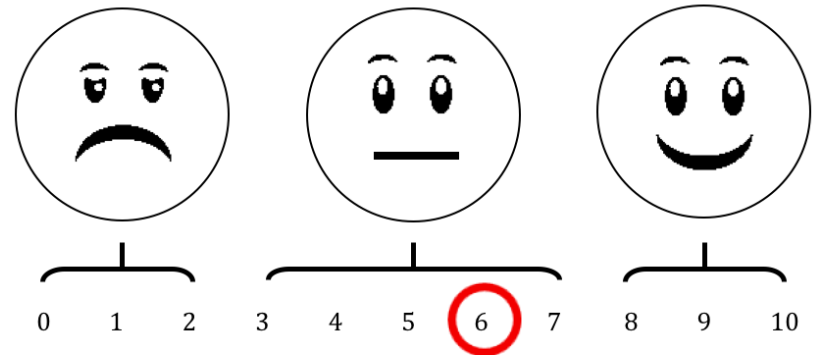
Place a mark along the line that best reflects the percentage of total time the student was academically engaged during math today.



Interpretation: The student displayed *academically engaged* behavior during 80% of large group math instruction today.

Academically Engaged

Circle the number that best represents the student's attention during circle time.



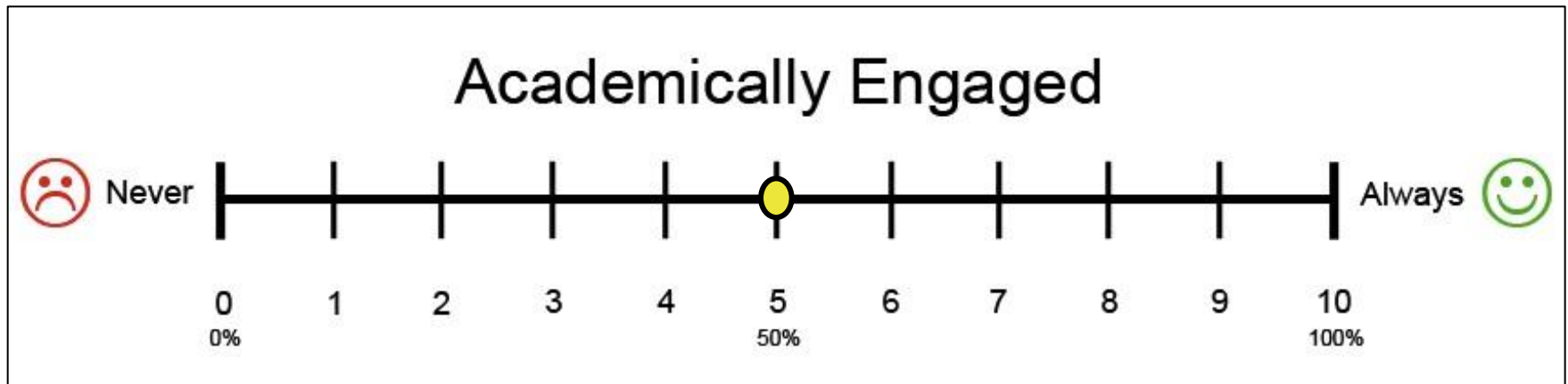
Interpretation: The student received a 6 for *attention* during group circle time activities today.





How do I use the DBR-SIS scale?

- Ratings should correspond to the extent to which the student was observed displaying the target behavior.
 - Percentage of time is one way to anchor yourself when thinking about your rating.
 - *For example: When rating at the end of a 40-minute Independent Reading Block, if the student was engaged about half of the time, then the student receives a rating of 5 on the DBR.*





How do I use the DBR-SIS scale?

- ▶ Ratings should correspond to the extent to which the student was observed displaying the target behavior.
- ▶ Another way to anchor your rating is to think in terms of Low, Medium, and High.

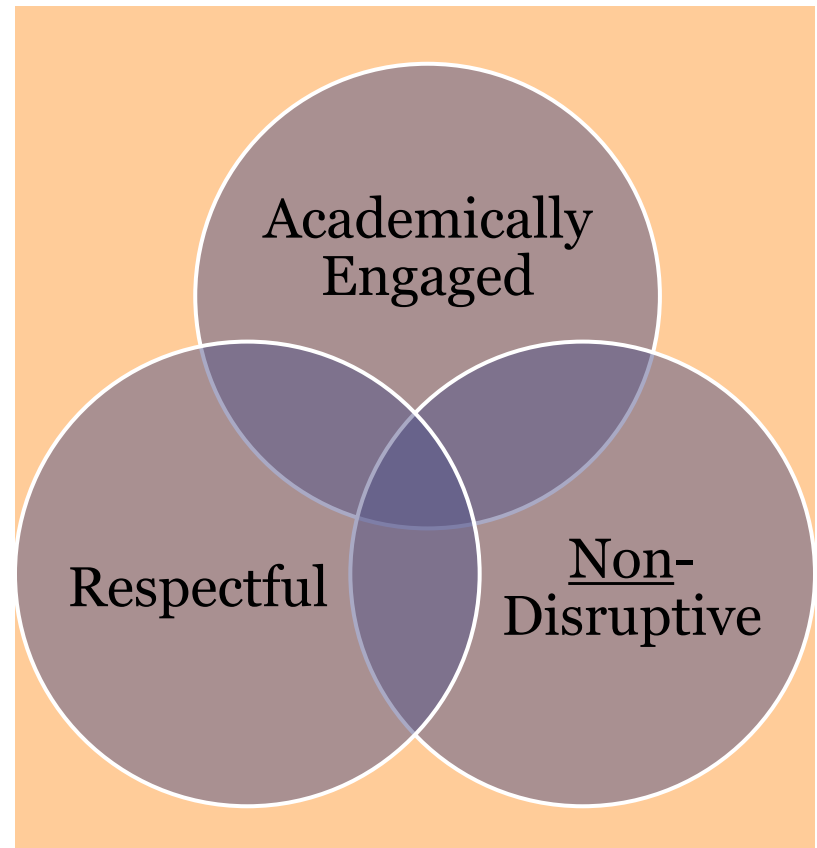
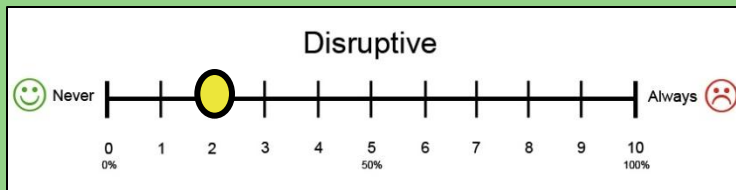
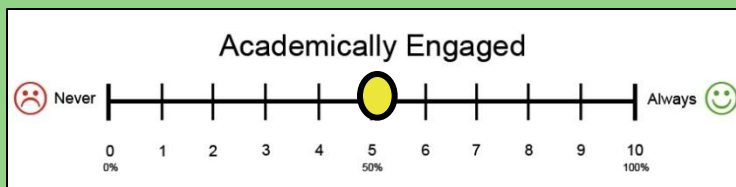
Low			Medium					High		
0	1	2	3	4	5	6	7	8	9	10
Never	Occasionally		A little less than half the time		Sometimes	A little more than half the time		Very frequently		Always





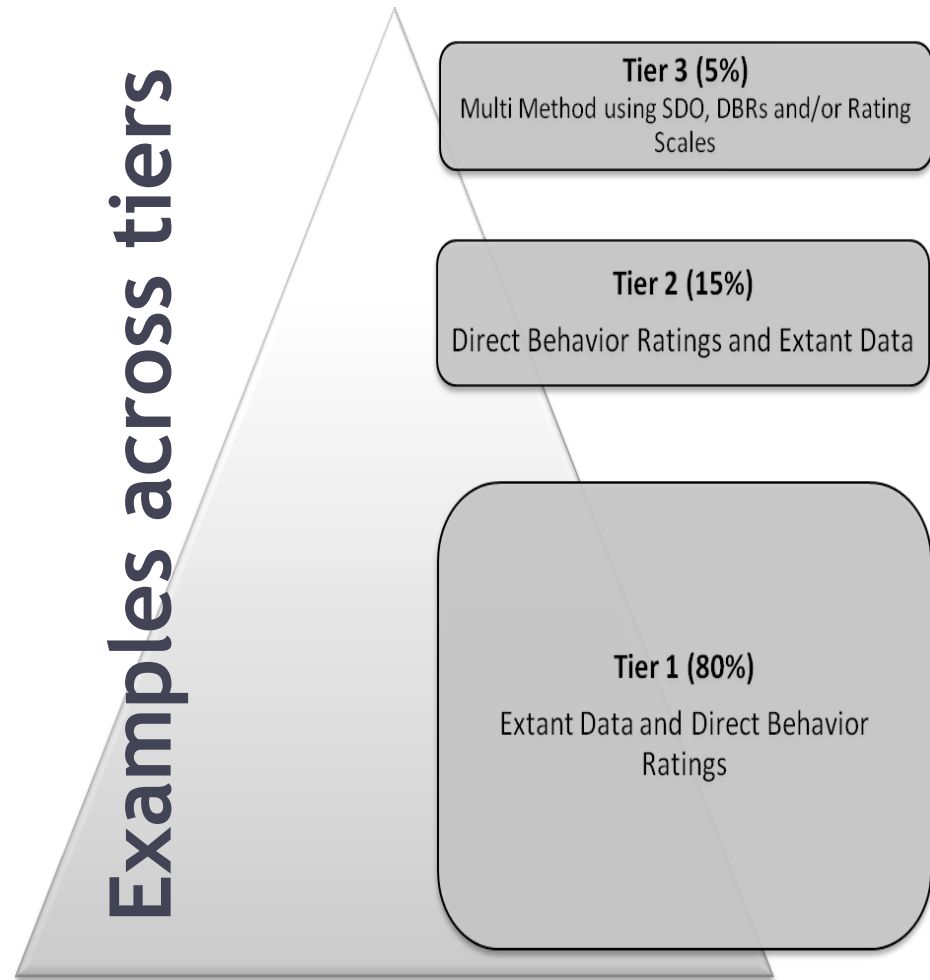
Reminder: Each behavior is to be rated independently of other targets

- Total ratings across behaviors do not have to equal 100%.
 - *Example: A student may be academically engaged 50% of the time and disruptive 20%.*



Possible Applications for DBR-SIS

Examples across tiers



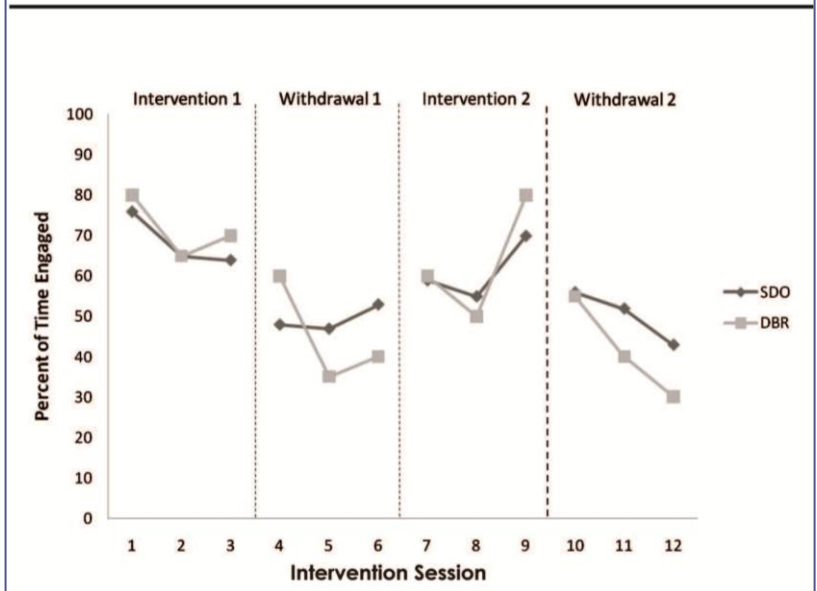
Tier I

Case Study: Method Comparison in Classwide Assessment

Riley-Tillman, Methe, & Weegar (2009)

- Sample: First grade classroom with 14 students
- Design: B-A-B-A
- Intervention: modeling and prompting of silent reading
- Measures: researcher-completed SDO, teacher-completed DBR-SIS
- Conclusion: DBR data can be sensitive to classroom-level intervention effects, maps closely to resource-intensive SDO

Systematic Direct Observation and Direct Behavior Rating Data of Engagement



	Phase Mean			
	B1	A1	B2	A2
DBR	72	45	63	42
SDO	68	49	61	50

Kindergarten Students at Pine Grove

- While reviewing discipline referral data over the past three months, the principal at Pine Grove School notices that Bus #7 has a disproportionate number relating to compliance with adult request. The principal speaks with the driver, who reports difficulty maintaining an acceptable level of noise on the bus. Because “all” the students on his bus are much too loud and do not listen to him when asked to lower their voices, he has been handling the problem by writing office referrals for disrespectful behavior. Both the principal and the bus driver agree this problem should be addressed through a plan targeting all students on bus #7.

Initial evaluation of DBR-SIS in screening assessment

Chafouleas, Kilgus, Jaffery, Riley-Tillman & Welsh (under review)

Sample: 66 teachers, over 1000 students in grades K-8

Measures: DBR-SIS completed 2x/day over 5 days, 2 standardized behavior screening measures

Analyses: Receiver operating characteristics (ROC) and correlations

Conclusion: Initial work suggests greater accuracy at lower grades, but strengths of various targets change by grade

Cut Scores Yielding Best Diagnostic Accuracy Statistics		
Behavior	Grade Grouping	Cut Score (0-10)
Disruptive	Early elem.	2
	Late elem.	1
	Middle	1
Academic Engagement	Early elem.	8
	Late elem.	8
	Middle	9
Respectful	Early elem.	9
	Late elem.	9
	Middle	9

As students get older...



Disruptive:

Academic Engagement



Tier II

DBR-SIS in Behavior Consultation Cases

Chafouleas, Sanetti, Kilgus, & Maggin (in press, *Exceptional Children*)

Sample: 20 teacher-student dyads in elementary grades

Design and Intervention: A-B intervention involving behavioral consultation and DRC-based intervention. Five options for “change metrics” were calculated.

Measures: researcher-completed SDO, teacher-completed DBR-SIS

Conclusion: Change (in expected directions) in student behavior across phases and sources. High correspondence between DBR-SIS and BOSS absolute change metrics suggests that students were ranked similarly across the two measures with regard to intervention responsiveness. Provides preliminary support for the use of DBR-SIS to differentiate between those who have or have not responded to intervention.

Descriptive statistics across scales and phases

			Mean	SD
DBR-SIS	Disruptive Behavior	Baseline	4.26	1.97
		Intervention	2.58	1.41
	Academic Engagement	Baseline	4.97	2.28
		Intervention	6.82	1.50
	Compliance	Baseline	5.74	1.93
		Intervention	7.34	1.31
BOSS	On-task	Baseline	69.98	19.76
		Intervention	81.94	14.22
	Off-task	Baseline	44.82	21.01
		Intervention	28.69	18.54

DBR-SIS in Classwide Self-Management

Chafouleas, Sanetti, Jaffery & Fallon (2012,)

- Sample: 8th grade, 2 teachers and 3 classrooms (17-24 students)
- Design: Multiple baseline across classrooms
- Intervention: Self-monitoring and a group contingency package, implemented over about 2 months
- Measures: student-completed DBR (teacher-checked), researcher-completed SDO
- Conclusion: Classwide intervention overall effective, think about target identification and need for supports based on baseline

DBR-SM and SDO Data Across Classes					
		Baseline	Intervention		
		M (SD)	Phase 1 M (SD)	Phase 2 M (SD)	
Ms. S – Period 5					
DBR-SM	Prepared.	7.9 (2.03)	7.6 (1.95)	8.8 (1.33)	↑
	Engagement	6.4 (2.80)	6.8 (2.31)	8.0 (1.71)	
SDO	Engagement	36.2 (12.51)	79.0 (5.08)	83.1 (.34)	↑↓
	Off-Task	70.4 (7.60)	30.7 (6.30)	21.7 (8.16)	
Ms. B – Period 3					
DBR-SM	Prepared.	9.6 (1.05)	9.9 (0.48)	9.9 (0.24)	↔
	Engagement	8.6 (1.36)	9.3 (0.99)	9.6 (0.76)	
SDO	Engagement	75.9 (5.68)	86.7 (2.36)	86.7 (5.87)	↑↓
	Off-Task	34.7 (4.58)	19.2 (5.53)	16.7 (6.41)	
Ms. S – Period 1					
DBR-SM	Prepared.	8.1 (1.90)	8.3 (1.35)	8.9 (0.92)	↑
	Engagement	7.4 (2.02)	7.8 (1.59)	8.1 (1.35)	
SDO	Engagement	57.9 (7.75)	71.0 (13.86)	80.6 (14.94)	↑↓
	Off-Task	47.5 (5.00)	34.6 (20.78)	28.9 (14.18)	

Susie, Sally, and Sandy

- Susie, Sally, and Sandy have been exhibiting significant amounts of in-class verbal aggression (e.g., name-calling, teasing) in Mr. Simon's class, and each student has been sent to the principal's office on numerous occasions. After consulting with the student services team, an assessment and intervention plan is discussed, with emphasis on collecting data for progress monitoring.

TIER III

DBR-SIS in Targeted Intervention for Students with ADHD

Vujnovic, Fabiano, Chafouleas, & Sen (under review)

- Sample: 13 boys with diagnosis of attention-deficit hyperactivity disorder
- Intervention: DRC-based intervention
- Design: Point, level, slope comparisons over 20 data collection days with both measures
- Measures: teacher-completed DBR-SIS (once at end of day) and DBR-MIS (completed multiple times each day)
- Conclusion: DBR instrumentation and procedures can be flexibly determined to match assessment situation

Point, Level, and Slope Estimates for DBR

	Mean (SD)
DBR-MIS	
point	71.67(31.68)
level	79.18(18.52)
slope	-0.19 (0.61)
DBR-SIS: Academic Engagement	
point	7.13(2.19)
level	7.57(1.36)
slope	-0.04 (0.05)
DBR-SIS: Non-Disruptive	
point	8.05(2.54)
level	7.66(2.30)
slope	-0.06(0.08)

DBR-SIS

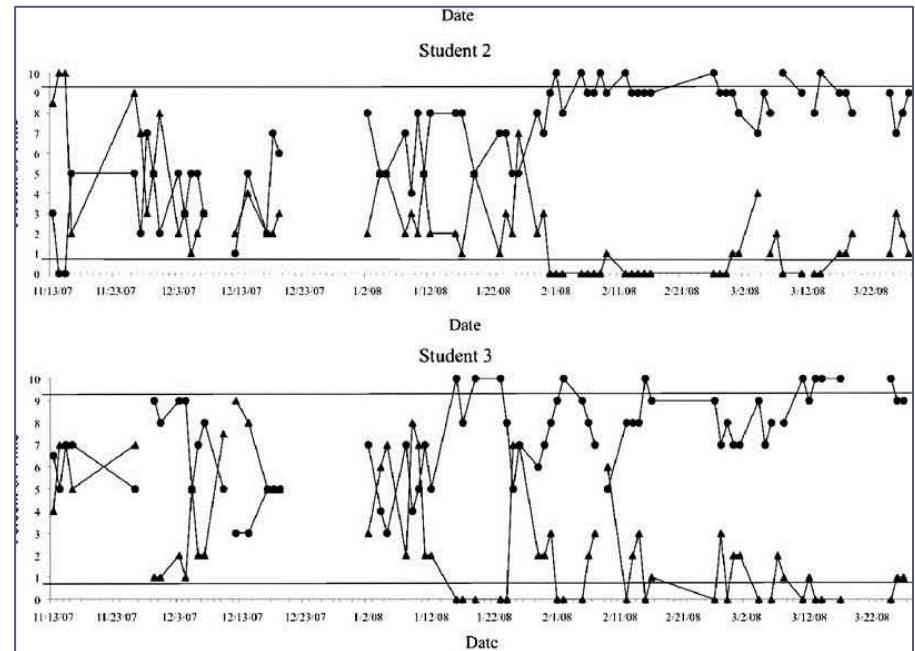
	AE	Non-DB
	Point	.854**
	Level	.830**
DBR-MIS	Level	.715**
	Slope	.741**
		.415
		.758**

DBR-SIS for Monitoring Students At-Risk

Chafouleas, Kilgus, & Hernandez (2009)

- Sample: full day K inclusive classroom, 2 teachers and 22 students
- Measures: teacher-completed DBR-SIS following am and pm over Nov-March for ALL students
- Conclusion: “Local” cut-score comparisons can be useful in examining individual student performance. Periodic re-assessment of all may be needed to re-confirm appropriate comparison

Target Behavior	Rating Time	FALL M (SD)	SPRING M (SD)
Academic	AM	8.72 (1.31)	9.40 (0.63)
Engagement	PM	8.25 (2.03)	9.37 (0.88)
Disruptive Behavior	AM	1.30 (1.47)	0.60 (0.62)
	PM	1.61 (2.08)	0.42 (0.52)



Chris

- Recently, Chris has been exhibiting high levels of off-task behavior in Ms. Wilson's 7th grade English class. Although Ms. Wilson does not describe this behavior as highly problematic, she wants to address it preventively. After consultation with the 7th grade team of teachers working with Chris, a tentative intervention plan is discussed and data collection tools are considered. Ms. Wilson makes it clear that she is not interested in highly invasive, resource intensive data collection strategies. Additionally, the 7th grade team decides it would like information about how his behavior compares to other students across settings.

Summary: How might DBR within multi-tiered assessment?

Similar to Curriculum-based Measurement (e.g., DIBELS)...

- DBR-SIS offers an **efficient** option for assessment.
- DBR-SIS allows for **defensible** decision making about student risk and progress through **repeated** measurement.
- DBR-SIS allows for standard general outcome measures that are relevant to student success. Unlike CBM, DBR-SIS affords additional **flexibility** in individualized target selection.



Other Random Information...

- DBR assessment training
- DBR in linking assessment and intervention
- DBR free materials on the web

DBR in Assessment: On-Line Training Module

Direct Behavior Rating:

Use in Assessment of Student Behavior



Project Director:
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Design & Development:
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V2.0 DBR: Use in Assessment of Student Behavior was created by Sandra M. Chafouleas
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Which behaviors will I rate?



▶ **Disruptive:**

Disruptive behavior is defined as a student action that interrupts regular school or classroom activity.

- ▶ *Examples:* out of seat, fidgeting, playing with objects, acting aggressively, talking/yelling about things that are unrelated to classroom instruction.



Following the video, rate Ricky's Academically Engaged, Respectful, and Disruptive behaviors





Direct Behavior Ratings

Assessment • Communication • Intervention



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News

Check out our updated site!

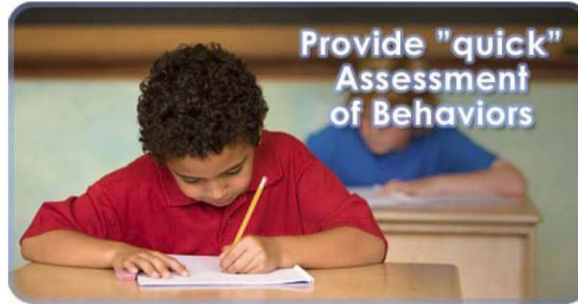
Updated DBR Materials including:

- DBR Overview Powerpoint
- DBR in Self-Monitoring Materials
- Standard DBR Form with Smiley Faces

DBR in Assessment: Training Module

Recent Publications

Recent Presentations



"I was surprised at how easy it was to complete the Direct Behavior Rating forms. This information is really valuable in helping me understand what's happening in my classroom." Sue, Kindergarten teacher

What is Direct Behavior Rating (DBR)?

DBR involves rating of behavior following a specified observation period, and then sharing of that information to inform decisions. As an example, a teacher might use DBR to rate how well Johnny paid attention in math class. Then, that teacher might share that rating with Johnny and, as part of an intervention, link a consequence (e.g. sticker) to that rating. DBR tools have a long history of use as a component of a behavior support plan (e.g. self-management, behavior contract), as well as the method for collecting information about behavior change over time (e.g., monitoring effects of medication for ADHD). Other common terms for DBR tools have included home-school note, good behavior note, behavior report card, etc...

Why use Direct Behavior Rating?

DBR can facilitate communication among students, parents, and teachers because ratings can provide a simple, inexpensive, and flexible way to provide frequent feedback about behavior. DBR is also appealing given a connection between data collection and intervention. DBR may serve both purposes! For example, DBR can be used to monitor behavior in response to

What does a DBR look like?

Click the Direct Behavior Rating below to view it larger.

About Us



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DBR Website

www.directbehaviorratings.org



Direct Behavior Ratings

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DBR for Intervention

An intervention is a planned set of activities designed to improve desired behavior. A substantial body of research exists to demonstrate the effectiveness of interventions that include DBR as one component.

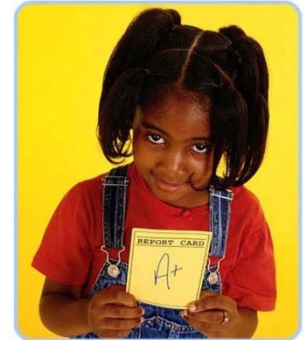
How can I use a DBR for intervention?

In addition to use in communication and assessment as an important part of providing comprehensive behavior supports, DBR is frequently used as one part of an intervention package, such as in an incentive program or self-management.

- **Incentive programs** (point cards) establish behavior contracts and systematic feedback between the child and adult. The frequent feedback provided by DBR, combined with short term goals and incentives, function to promote positive behavior and reduce undesirable behavior.
- **Self management** components are often used as part of a behavior intervention. They provide an opportunity to teach children to monitor and evaluate their own behavior. A student uses DBR to rate his/her own behavior, perhaps at the same time an adult rates the same behavior so as to check for accuracy and agreement.

Who can use a DBR for intervention?

DBR should be used by parents, teachers, children, administrators, and intervention teams to facilitate interventions designed to improve behavior. It is likely that many intervention applications will be paired with effective assessment and communication components using DBR.



Additional Resources

- [DBR Standard Form and Instructions](#)
- [DBR Intervention Protocols:](#)
 - [Incentive Program](#)
 - [Self Management](#)
- [DBR Intervention Packages](#)
- [Podcast: Daily Report Card \(DRC\) in Self-Management Interventions](#)

Questions, comments, and thanks...

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